AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1. (original) Biosensor for detection of an antigen (6) by means of an antigen/antibody coupling, consisting of the following elements:

- A silicon substrate (2),
- At least one interdigital electrode pair structure (12) accommodated on the silicon substrate (2) with a spacing between the electrode pairs (13) of maximum 1.0 µm,
- A counter-electrode (11) accommodated on the silicon substrate (2),
- A reference electrode (9),
- A first layer made of protein (4) at least covering over the interdigital electrode structure (12),
- A selective second protein layer applied over the first layer which contains a selected capture antibody (5) corresponding to the detecting antigen (6) and which can couple to the antigen,
- with a sensor signal being able to be read out at the interdigital electrode structure (12) if, from a sample to be analyzed which is in contact with the biosensor, the antigen (6) is coupled to the capture antibody (5) and by means of an enzyme-marked detection antibody (7) also coupled to the antigen, an enzymatic release of a redox-reactive molecule on the sensor surface (1) occurs.

2. (original) Biosensor as claimed in claim 1, in which the first protein layer consists of the proteins A, G or G'.

3. (currently amended) Biosensor as claimed in ~~one of the previous claims~~ claim 1, in which for increasing selectivity of the second layer the capture antibodies (5) feature a directed binding to the protein (4) of the first layer.

4. (currently amended) Biosensor as claimed in ~~one of the previous claims~~ claim 1, in which, instead of the amperometric readout by means of redox recycling, a signal is detected using alternating current or cyclic voltammetry.

5. (currently amended) Biosensor as claimed in ~~one of the claims 1 or 2~~ claim 1, which is coupled with a potentiostat for readout of the sensor signal.

6. (currently amended) Biosensor as claimed in ~~one of the previous claims~~ claim 1, in which the sample to be analyzed is provided as fluid on the surface (1) of the biosensor via a flow system.

7. (currently amended) Biosensor as claimed in ~~one of the previous claims~~ claim 1, in which interdigital electrode structures (12) and counter-electrode (11) are made of gold.

8. (currently amended) Biosensor as claimed in ~~one of the previous claims~~ claim 1, in which the reference electrode represents an Ag/AgCl reference.

9. (currently amended) Biosensor as claimed in ~~one of the previous claims~~ claim 1, in which the reference electrode is integrated onto the one reference electrode (9) on the biosensor.

10. (currently amended) Biosensor as claimed in ~~one of the previous claims~~ claim 1, in which the antigen (6) is simultaneously an allergen.

11. (currently amended) Biosensor as claimed in ~~one of the previous claims~~ claim 1, in which the antigen (6) is a protein, a polypeptide or oligopeptide.

12. (currently amended) Biosensor as claimed in ~~one of the claims 1 to 10~~ claim 1, in which the antigen is a microorganism such as a bacterium or a virus.

13. (currently amended) Biosensor as claimed in ~~one of the claims 1 to 11~~ claim 1, in which the antigen is an organic compound such as a toxin, medicine, pesticide, anthrax, antibiotic or aromatic hydrocarbon.

14. (original) Method for operation of a biosensor for detection of an antigen (6) by means of an antigen/antibody coupling, which features the following steps:

- Coating of a biosensor constructed on a silicon chip with a protein base coating with a protein A, G or G` with simultaneous covering of interdigital electrode pair structures (12) on the surface of the silicon chip,
- Fabrication of a further layer on the protein coating which contains a capture antibody (5) which is selected so that it can coupled with the antigen (6) sought,
- Contacting of the sensor surface (1) with a fluid to be analyzed, with an antigen contained in the fluid being able to be bound selectively to the antibodies of the uppermost layer,
- Marking of the antigen (6) by a detection antibody (7) which is coupled with an enzyme and which simultaneously couples with the antigen (6),
- Readout of a sensor signal by means of a potentiostat through redox recycling, with the enzyme-bound detection antibody (7) causing an enzymatic release of a redox-reactive molecule on the sensor surface and counter-electrode and reference electrode being located in the same flow system as the sensor surface.

15. (new) Biosensor as claimed in claim 2, in which for increasing selectivity of the second layer the capture antibodies (5) feature a directed binding to the protein (4) of the first layer.

16. (new) Biosensor as claimed in claim 2, in which, instead of the amperometric readout by means of redox recycling, a signal is detected using alternating current or cyclic voltammetry.

17. (new) Biosensor as claimed in claim 3, in which, instead of the amperometric readout by means of redox recycling, a signal is detected using alternating current or cyclic voltammetry.

18. (new) Biosensor as claimed in claim 2, which is coupled with a potentiostat for readout of the sensor signal.

19. (new) Biosensor as claimed in claim 2, in which the sample to be analyzed is provided as fluid on the surface (1) of the biosensor via a flow system.

20. (new) Biosensor as claimed in claim 3, in which the sample to be analyzed is provided as fluid on the surface (1) of the biosensor via a flow system.